Adaptive Management of Water Resources in the Puget Sound

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Effective adaptation to climate change requires a willingness to act in the face of considerable uncertainty. The uncertainty in climate change must be considered along with numerous of significant uncertainties including demographics, global economics, and the emergence of entirely new issues and public concerns. Adaptation to climate change will not occur independently from adaptations for other concerns but as part of the overall adaptation plan. The ability to effectively plan and adapt for climate change and its impacts will require improved understanding of what constitutes "current" climate conditions, climate variability and probable patterns of change. Analytical tools, process understanding of physical, biological, economic processes will continue to evolve during the period of adaptation. Superimposing uncertain climate change impacts on already highly dynamic, complex systems will require adaptation management tools that explicitly consider uncertainties. Because of the significant uncertainty associated with climate, decisions must be made that are incremental and preserve future degrees of freedom. One such approach is referred to as adaptive management: a systematic and rigorous, scientifically defensible program of learning from the outcomes of management actions, accommodating change, and improving management. While generally advocated, adaptive management has proven difficult to implement due to: 1) its direct and indirect costs (e.g., the costs of improved understanding through research and the political risks of potentially having clearly identified failures), and 2) the lack of readily available, widely implemented tools for resolving critical management issues (scientific methods for analyzing, understanding, and managing problems within complex and anthropogenically altered environmental systems). CAMP (Climate Adaptation Management Platform)provides a computational infrastructure to operationalize adaptive management for climate impacts.